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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/217,401      | 12/21/1998  | KENZO ISHIDA         | 884.088US1          | 8371             |

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EXAMINER

TRAN, THANH Y

ART UNIT PAPER NUMBER

2841

DATE MAILED: 04/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/217,401

Applicant(s)

ISHIDA ET AL.

Examiner

Thanh Y. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 24 March 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 30-56 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 30-56 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 30-38 and 41-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kazama (U.S. 6,174,172) in view of Gates et al (U.S. 6,524,115).

With respect to claims 30, 32, 34 and 35, Kazama discloses a mounting socket (2, Fig. 14), comprising a body (2) having first and second sides, and having a plurality of vias extending from a first side to a second side (see Figs. 14, 21, 22); a plurality of conductive terminals (33, Fig. 14) within the vias (8), each terminal (33) including a spring extending through one of the vias and adapted to exert a return force when compressed (see col. 4, lines 3-14), solder material in contact with the spring and with the one via (8) (see col. 5, lines 58-65; and col. 6, lines 15-26).

Kazama does not teach a mounting socket comprising a conductive polymer is deformable when the spring is compressed and in contact with the spring and with the one via; the conductive polymer fills the vias from side to side and end to end. Gates et al teaches a mounting socket (see Fig. 2) comprising a conductive polymer (conducting elastic column 28) provided in the vias. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the socket of Kazama by replacing the solder material with a conductive polymer in the vias from side to side and end to end for

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retaining the spring within the via/hole and increasing resilient properties of the terminals. It should be noted that conductive elastic column (terminal 28) in the prior art of Gates et al is capable of being a conductive polymer because terminal 28 is a conductive, elastic material.

With respect to claim 31, Kazama discloses a mounting socket (2, Fig. 14) where the spring is a coil (see Fig. 14, element 33, col. 6, lines 15-58).

With respect to claim 33, figure 14 of Kazama shows that the vias have a constant width.

With respect to claim 36, figure 14 of Kazama shows that the terminals (33) extend beyond the first and second sides of the body (2).

With respect to claim 37, Kazama does not teach that the terminals are solderless. The Examiner takes Official Notice that it is known to provide the terminals are solderless in the vias of the socket. Thus it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the device of Kazama by including the solderless terminals in the vias for the purpose of intended use.

With respect to claim 38, figure 8(b) of Kazama shows that a first adhesive layer (5) affixed to the first side of the body (2).

With respect to claim 41, figure 8(b) of Kazama further shows adhesive layer (see "adhesive layer" as labeled in figure 8 b) affixed to the second side of the body (2).

With respect to claim 42, Kazama discloses a circuit assembly (Figs. 14, 22), comprising a substrate (6) having a plurality of lands (7) thereon; a socket body (2) having a first side in contact with the substrate (6), and having an opposite side; a plurality of vias (8) extending from the first side to the second side; a plurality of conductive terminals (33) within the vias (8) and contacting the lands (7), each terminal (33) including a spring extending through one of the vias

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(8) and adapted to exert a return force when compressed. The same reasoning applies to claim 42 regarding the limitation of a conductive polymer in contact with the spring and with the one via as discussed above in claim 30.

With respect to claim 43, Kazama discloses a circuit assembly (Figs. 14, 22) wherein the conductive terminals (33) inherently exert a force upon the lands (7) when compressed.

With respect to claim 44, figure 8(b) of Kazama further shows a circuit assembly comprising an adhesive layer (as labeled in figure 8 b) bonding the socket body (2) to the substrate (6).

With respect to claim 45, figure 14 of Kazama further shows comprising an integrated circuit (semiconductor device) (4) coupled to the substrate (6).

With respect to claims 46 and 47, Kazama does not teach the circuit assembly comprising a circuit board contacting the opposite side of the socket body, and another adhesive layer on the opposite side of the socket body bonding it to the circuit board. The Examiner takes Official Notice that it is known to provide the circuit assembly with a circuit board bonded to the opposite side of the socket. Thus it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the circuit assembly of Kazama by including a circuit board for use in high density IC package for performing electrical functions.

*Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 39-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kazama (U.S. 6,174,172) in view of Gates et al (U.S. 6,524,115) as applied to claim 30 above, and further in view of Stopperan (U.S. 5,719,749).

Kazama and Gates et al do not teach a polymer tape applied to the first adhesive layer; a ground and power line circuit on the polymer tape; and a second adhesive layer applied over the ground and power line circuit.

Stopperan teaches the mounting assembly (see Figs. 2-3) having the first adhesive layer formed by polymer (see column 9, lines 17-19) and a ground (82) and power trace circuit (see column 1, lines 44-46) laid on the polymer tape and the second adhesive layer applied on and protecting the ground and power line circuit (see Figs. 2-3). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to implement the mounting device of Kazama and Gates et al by having ground and power traces laid on the polymer tape which is applied to the first adhesive layer as taught by Stopperan for the purpose of protecting the ground and power lines from physical shocks.

Method claims 48-56 are deemed to be inherent upon the references of Kazama and Gates et al as applied above in claims 1-47.

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**Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh Y. Tran whose telephone number is (703) 305-4757. The examiner can normally be reached on Monday through Thursday and every other Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin, can be reached on (703) 308-3121. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3431.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

TYT

A handwritten signature in black ink, appearing to be 'DM', is written over a faint, larger signature.

**DAVID MARTIN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800**